

REMARKS/ARGUMENTS

Responsive to the Office Action dated June 4, 2008, Claims 1-7 and 12 remain pending for prosecution with Claims 1, 5 and 12 being independent.

I. Claim Rejections - 35 U.S.C. § 102

Applicant acknowledges with appreciation the withdrawal of the previous rejection of Claims 1-7 and 12 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,900,206 to Pellegrin et al.. However, Applicant respectfully submits that the new grounds of rejection presented in the instant Office Action and failure to address Applicant's previously-submitted arguments against the obviousness rejection that has been maintained are improper and evidence of a piecemeal examination. Furthermore, Applicant submits that the new grounds of rejection are improper in that Applicant made no amendments to the claims in its last response. Applicant therefore respectfully submits that there was no need for a new search of the prior art to be conducted and requests withdrawal of the new and improper rejection.

II. Claim Rejections - 35 U.S.C. § 103

A. Obviousness

When determining the question of obviousness, underlying factual questions are presented which include (1) the scope and content of the prior art; (2) the level of ordinary skill in the art at the time of the invention; (3) objective evidence of nonobviousness; and (4) the differences between the prior art and the claimed subject matter. Graham v. John Deere Co., 383 U.S. 1, 17-18, 148 USPQ 459, 467 (1966). Moreover, with regard to the last prong of the *Graham* inquiry, "[t]o determine whether there was an apparent reason to combine the known elements in the way a patent claims, it will often be necessary to look to interrelated teachings of multiple patents; to the effects of demands known to the design community or present in the

marketplace; and to the background knowledge possessed by a person having ordinary skill in the art. To facilitate review, this analysis should be made explicit.” KSR International v. Teleflex Inc., 127 U.S. 1727 (2007).

Applicant does not contest that most of the references that have been cited and relied on by the Examiner have at least marginal pertinence to the particular problem(s) solved by the present invention in that the references disclose systems for manufacturing fibrous or polymer melts. Stratoflex, Inc. v. Aeroquip Corp., 713 F.2d 1530, 1535, 218 USPQ 8781, 8786 (Fed. Cir. 1983).

The person of ordinary skill in the art is a hypothetical person who is presumed to know the relevant prior art. Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc., 807 F.2d 955, 962, 1 USPQ2d 1196, 1201 (Fed. Cir. 1986). The level of ordinary skill in the art may be determined by looking to the references of record. In re GPAC, Inc., 57 F.3d 1573, 35 USPQ2d 1116 (Fed. Cir. 1995). The references of record in this case reveal that one skilled in the art would possess a medium level of sophistication. Thus, Applicant submits that, as substantiated by the cited references, those with at least an engineering degree or substantial experience in the polymer extrusion field or the like would most likely be a person with ordinary skill in this field of endeavor.

With respect to objective evidence of nonobviousness, Applicant submits that the record supports the conclusion that there are long-felt but unsolved needs met by the present invention. The present invention is directed to the particular problem of providing a system and method for reducing the amount of trim generated in the production of polymer fibers, thereby making the process of creating spunbond or woven mats more efficient. The above-described features represent solutions to long-felt needs that could not be met by the known prior art.

Finally, *prima facie* obviousness requires that there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references. This motivation-suggestion-teaching test informs the Graham analysis. “To reach a non-hindsight driven conclusion as to whether a person having ordinary skill in the art at the time of the invention would have viewed the subject matter as a whole to have been obvious in view of multiple references,” there must be “some rationale, articulation, or reasoned basis to explain why the conclusion of obviousness is correct.” In re Kahn, (Fed. Cir. 2006). The *KSR International* decision by the Supreme Court has not eliminated the motivation-suggestion-teaching test to determine whether prior art references have been properly combined. Rather, in addition to the motivation-suggestion-teaching test, the Court discussed that combinations of known technology that are “expected” may not be patentable. Stated in the affirmative, therefore, combinations are nonobvious and patentable if unexpected. In the present application, no single prior art reference nor any combination thereof meets the claimed limitations of Applicant’s invention.

B. Rejection of Claims 1-7 and 12 over Varona in view of Allen

Claims 1-7 and 12 were also rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,679,042 to Varona in view of U.S. Patent No. 6,220,843 to Allen. For the following reasons, Applicant respectfully requests reconsideration and withdrawal of this rejection.

In the Office Action, it is asserted that Varona teaches “an apparatus (105) which comprises an extruder assembly (114), a motor (118) as a pump for receiving an extruded polymer from the extruder, wherein the pump forces the molten material through the extruder

into the delivery pipe (12), a hopper (110) for receiving a polymer chip (112), plurality of spinning pack (122, 124, 126) receiving the extruded polymer from the pump or extruder assembly, a conveyor belt (116, 128), wherein the belt (128) is located below the plurality of spinning pack and positioned to receive a plurality of filaments (A,B,C) created when the extruded polymer is passed through the plurality of spinning pack (See figure 5, col. 6 lines 42-66), and an entangling means such as conventional withdrawn roll or calendar roll for receiving the plurality of polymer filaments from the belts, and involved to emboss or bond the web (100) into a mat or other product with a pattern (See col. 7 lines 23-30).” Varona is further asserted to teach “that the polymer fiber is PET or polyethylene (See col. 5 lines 54-56)” and that “the die head (122) produces large denier, die head (124) produces medium denier and a diet head (126) produces fibers of fine denier, then the resulting gradient will have the fibers in zone A having the largest pore size, zone B having smaller pore size and Zone C having smallest pore size (See col. 7 lines 52-60).” Furthermore, it “teaches that the die head having apertures of different diameter and positioned as the laterally outermost spinning packs in a row of spinning packs, and aligned with an outer lateral edge of the belt.” However, the Office Action admits that Varona “fails to teach or suggest that one of the plurality of die head having [a] lesser number of orifices.” The Office Action further asserts that Varona “teaches that the orifices of the spinning pack comprises a bore having a first end to receive the material and a second end that outputs a filaments [sic] (See figure 5), the first end having diameter [sic] at least about 50% larger than a diameter of the second end (See col. 5 lines 56-63). The Office Action concludes by stating that “Varona (‘042) discloses all claimed structural limitations as discussed above. It further teaches that the apparatus comprises a spinning pack,” but then acknowledges that Varona “fails to teach or suggest a spinning pack having a plate with multiple orifices.”

To make up for this deficiency, Allen is asserted to disclose “a melt blowing apparatus which comprises die tips or nozzles as spinner pack having a plate (41, 42) with multiple orifices (53) (See col. 5 lines 11-16, 19-24, 30-34), wherein apparatus comprises [sic] a plurality of spinning packs in a row (See figure 1).” Figure 4 is asserted to show “the cross sectional view of spinning pack of nozzle which contains the pack with plate (41, 42), wherein plate contains multiple orifices for producing desired shape of filaments as shown in figure 3.” Figure 3 is also asserted to further teach “different shapes of the filaments which inherently teaches that the one or more spinning packs of the plurality of spinning packs comprises lesser numbers of orifices (See assembly and operation of the patent).” Furthermore, it is asserted that “table 1 cites different types of nozzles with different size of orifices and number of orifices per inch, wherein number of orifices per inch indicates that nozzle comprises plate with different orifices (See col. 8 lines 1-20, 32-34). Therefore, the Office Action concludes that “[i]t would have been obvious to one of ordinary skill in the art at the time of Applicant’s invention to modify the invention of Varona (‘042) by providing a spinning pack with a plate wherein plate [sic] comprises multiple orifices because such an alignment is involved to achieve a predetermined and varied pattern of the product (See col. 8 lines 1-7) as suggested by Allen.”

Applicant respectfully traverses the assertion that the Varona and Allen references, when combined, teach or suggest all of Applicant’s claim limitations. As discussed above and admitted by the Office Action, Varona fails to teach or suggest a plurality of spinning packs, each spinning pack having a plate with multiple orifices, wherein at least one spinning pack of the plurality has a lesser number of orifices than one or more of the remaining spinning packs. Rather, Varona teaches a non-woven organic mat with a pore size gradient to improve wicking properties. The pore size gradient is created by incorporating an array of different fiber

diameters or compositions into the non-woven mat and then subjecting the mat to a heat source. The differential shrinkage of the different diameter fibers or compositions creates a pore size gradient. Applicant agrees that there is no teaching or suggestion whatsoever in Varona to provide reduced-capacity spinning packs or spinning packs with fewer orifices than others as claimed by Applicant.

Applicant respectfully submits that, contrary to the Office Action's assertions, Allen does not teach or suggest these elements of Applicant's claimed invention. Allen discloses a melt-blowing technology for delivery adhesive to a substrate that could theoretically be applied to the formation of an organic non-woven mat. In particular, Allen teaches a modulated die construction that facilitates repair and/or replacement in addition to providing user flexibility in selecting effective die lengths. Contrary to the Office Action assertions, however, Allen does not teach or suggest spinning packs at all much less each spinning pack having a plate with multiple orifices, wherein at least one spinning pack of the plurality has a lesser number of orifices than one or more of the remaining spinning packs. It is not spinning packs that contain a plate (11, 12) as stated by the Office Action, but rather "the melt blowing die 10 of the present invention comprises a plurality of side-by-side die units 15 comprising manifold segments 11 and die modules 12." (Col. 3, lines 62-65). Moreover, the die units 15 are further disclosed as including "a manifold segment 11, a die module 12 mounted thereon, and a valve actuator 20 for controlling the flow of polymer melt through the die segment." (Col. 4, lines 5-7).

Moreover, Applicant respectfully traverses the Examiner's assertion that Allen's Figure 3 teaches different shapes of the filaments thereby inherently teaching that the one or more spinning packs comprises a lesser number of orifices. This is inapposite and the Examiner has provided no evidence or substantiation for this claim of inherency. "In relying upon the theory

of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original). In fact, Allen's assembly and operation section specifically teaches that the differences in filament size and shape are a result of variable die lengths. There is absolutely no basis in fact or technical reason to support the assertion that Allen teaches spinning packs much less spinning packs wherein one or more of the spinning packs comprises a lesser number of orifices.

Accordingly, Varona and Allen, individually and in combination, fail to teach or suggest the combination asserted by the Examiner. Further, neither of the references teaches nor suggests all of the elements of independent Claims 1, 5 and 12 and no resultant apparatus could have been created from these references that would meet the limitations of these claims. Moreover, one of ordinary skill in the art would not have arrived at Applicant's claimed invention because Applicant's invention would not be an "expected" result of the combination of these references since both references, individually and in combination, fail to meet all the limitations of the subject claims. Therefore, Applicant's Claims 1-7 and 12 are nonobvious.

C. Rejection of Claims 1-7 and 12 over Varona in view of Barbier

Claims 1-7 and 12 were also rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,679,042 to Varona in view of U.S. Patent No. 6,164,950 to Barbier et al.. For the following reasons, Applicant respectfully requests reconsideration and withdrawal of this rejection.

In the Office Action, the same statements about the teachings of Varona discussed and traversed hereinabove were made with the conclusion that "Varona ('042) discloses all claimed

structural limitations as discussed above. If further teaches that the apparatus comprises a spinning pack, but fails to teach or suggest a spinning pack having a plate with multiple orifices.” Barbier is therefore asserted to disclose a “device for producing thermoplastic filaments which comprises rectangular or round spinning nozzle packs for extruding the filaments (see abstract), wherein each spinning pack (1,14) having a plate with multiple orifices (7,8) (See figures 1a-1b and 2a-2d), wherein at least one spinning pack of the plurality of spinning packs has a lesser number of orifices (16) than one or more of the remaining spinning packs (See figure 4a, 5a).” Therefore, the Office Action concludes, “[i]t would have been obvious to one of ordinary skill in the art at the time of Applicant’s invention to modify the invention of Varona (‘042) by providing a spinning pack of Barbier et al. because such an alignment is involved to produce mixtures of matrix filaments and binding filaments, which lead to produce a good adhesive bonding in the finished carpet such that there are no loose fibers.”

Applicant respectfully traverses the assertion that the Varona and Barbier references, when combined, teach or suggest all of Applicant’s claim limitations. As discussed above and admitted by the Office Action, Varona fails to teach or suggest a plurality of spinning packs, each spinning pack having a plate with multiple orifices, wherein at least one spinning pack of the plurality has a lesser number of orifices than one or more of the remaining spinning packs. Rather, Varona teaches a non-woven organic mat with a pore size gradient to improve wicking properties. The pore size gradient is created by incorporating an array of different fiber diameters or compositions into the non-woven mat and then subjecting the mat to a heat source. The differential shrinkage of the different diameter fibers or compositions creates a pore size gradient. Applicant agrees that there is no teaching or suggestion whatsoever in Varona to

provide reduced-capacity spinning packs or spinning packs with fewer orifices than others as claimed by Applicant.

Applicant respectfully submits that, contrary to the Office Action's assertions, Barbier does not teach or suggest these elements of Applicant's claimed invention. Barbier does not teach or suggest reduced-capacity spinning packs or spinning packs with fewer orifices than others as claimed by Applicant. Rather, Barbier teaches spatially combining two different spinning masses within one nozzle to double the capacity of that nozzle, not to produce a density gradient as asserted by the Office Action. Barbier describes how air and orifice spacing are used to shield a matrix filaments, of one mass and diameter, from a binding filament, of another mass and smaller diameter, to produce a uniform web. Barbier clearly states that, since the matrix material and binding material have different titers, different orifice diameters are required for each material if level throughput of the two materials is to be achieved. Thus, the orifice spacing and size gradient taught by Barbier are not intended to produce a volume or density gradient, but rather to produce uniformity. Additional, each orifice size is intended for a different material. Moreover, Barbier clearly teaches that the number of orifices and the difference in orifice sizes are sensitive to the difference in the melt point of the two materials. Thus, two nozzles with differing orifice configurations are not meant to be used at the same time with one set of materials.

Accordingly, Varona and Barbier, individually and in combination, fail to teach or suggest the combination asserted by the Examiner. Further, neither of the references teaches nor suggests all of the elements of independent Claims 1, 5 and 12 and no resultant apparatus could have been created from these references that would meet the limitations of these claims. Moreover, one of ordinary skill in the art would not have arrived at Applicant's claimed

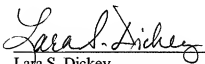
invention because Applicant's invention would not be an "expected" result of the combination of these references since both references, individually and in combination, fail to meet all the limitations of the subject claims. Therefore, Applicant's Claims 1-7 and 12 are nonobvious.

III. Conclusion

Applicant respectfully submits the claims as amended are in condition for formal allowance and such is courteously solicited. If any issue regarding the allowability of any of the pending claims in the present application could be readily resolved, or if other action could be taken to further advance this application such as an Examiner's amendment, or if the Examiner should have any questions regarding the present amendment, it is respectfully requested that the Examiner please telephone Applicant's undersigned attorney in this regard. Should any fees be necessitated by this response, the Commissioner is hereby authorized to deduct such fees from Deposit Account No. 11-0160.

Respectfully submitted,

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